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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,370	02/10/2004	Masafumi Mochizuki	NIT-320-02	9528

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MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.
1800 DIAGONAL ROAD
SUITE 370
ALEXANDRIA, VA 22314

EXAMINER

TUGBANG, ANTHONY D

ART UNIT	PAPER NUMBER
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3729

MAIL DATE	DELIVERY MODE
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01/24/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/774,370

Applicant(s)

MOCHIZUKI ET AL.

Examiner

A. Dexter Tugbang

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/046,973.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Attachment A</u> . |

DETAILED ACTION

Response to Amendment

1. The applicant(s) amendment and response filed on November 13, 2007 has been fully considered and made of record.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

3. Claims 12 through 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Mallary et al, Partee and Takeura et al.

Mallary discloses a method for manufacturing at least a single pole type magnetic head (in Figs. 1 and 4) comprising: forming a groove (not labeled in Fig. 4) on an inorganic insulating layer (e.g. 15); forming a magnetic layer (e.g. 16) serving as a magnetic main pole of a write head in the groove; and forming a recess in the magnetic on a trailing side of an air bearing surface, where the recess is formed by ion milling (e.g. 480, col. 7, lines 32-50).

It is noted that the insulating layer (e.g. 15) of Mallary is formed of a material of alumina, i.e. aluminum oxide (col. 6, lines 32-35), as alumina is inherently an inorganic insulating material. As evidence of inherency that alumina is an inorganic insulating material, the examiner cites Takeura et al (col. 3, lines 24-25).

It is further noted that the recess of the magnetic layer (e.g. 16) of Mallary is inherently formed on a trailing side (left vertical surface of block 10 in Fig. 1) of an air bearing surface. The air bearing surface is discussed by Mallary at col. 6, lines 7+. As evidence of inherency,

Art Unit: 3729

Partee shows in equivalent magnetic head (in Fig. 1) having a trailing side (e.g. 11, left vertical side of block 12) of an air bearing surface.

With respect to the “wherein...” clause (lines 9-12 of Claim 12) , Mallary (in Fig. 4) shows the magnetic layer, i.e. main pole (e.g. 16), after the recess has been formed, with a first line segment opposed to an auxiliary pole (e.g. 14) and a second line segment opposed to the first line segment. The second line segment has one point closer to the first line segment than opposite ends of the second line segment. To illustrate this feature, the examiner has provided Attachment A of Mallary's Figure 4.

Claim Rejections - 35 USC § 103

4. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mallary et al in view of Cohen et al.

Mallary discloses the claimed manufacturing method as relied upon above in Claim 12. Mallary does not appear to mention that the groove formed in the inorganic insulating layer is formed by using a resist pattern on the insulating layer and then etching using the resist pattern as a mask.

Cohen shows that it is conventional to pattern an inorganic insulating layer of alumina (e.g. 40) by using a resist pattern (e.g. 42, 44, 46 in Fig. 3C) to etch a groove in the insulating layer (see sequence of Figs. 3C to 3D, col. 8, lines 8+).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of Mallary by utilizing the conventional resist and

Art Unit: 3729

etching process of Cohen, to positively produce a fine patterned groove in the inorganic insulating layer of alumina.

Response to Arguments

5. The applicant(s) arguments filed November 13, 2007 have been fully considered but they are not persuasive.

The applicant(s) argue that the prior art does not teach each and every single step in Claim 12.

This is simply not true as the applicant(s) have apparently overlooked how broad their claim construction is when it comes to Claim 12. The examiner notes that the claim **never** recites *how* the groove is formed, *how* the magnetic layer is formed and *how* the recess is formed.

With respect to the inorganic insulating layer (e.g. 15) of Mallery, the mere shape of it forms a groove as the claims never make a distinction as to how this groove is formed in the insulating layer. Thus, the limitations of “forming...layer” (line 4 of Claim 12) is clearly met by Mallery.

Second, the magnetic layer (e.g. 16) of Mallery is a magnetic pole and can thus, be read as a “main pole”. Without this “main pole”, Mallery’s invention would not work as Mallery needs the main pole (e.g. 16) to orient the magnetic field during operation (i.e. see col. 2, lines 19+).

Third, as the examiner has already explained above, because Mallery utilizes ion milling to shape the profile of the main pole (e.g. 16), the very shaping is what forms the recess and thus meets the limitations of "forming...surface" (lines 7-8 of Claim 12).

And finally, the examiner has provided Attachment A to illustrate how Mallery meets the wherein clause (last 4 lines of Claim 12).

Accordingly, the rejections above are hereby maintained.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 571-272-4570. The examiner can normally be reached on Monday - Friday 7:30 am - 4:00 pm.

Art Unit: 3729

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

**/A. Dexter Tugbang/
Primary Examiner
Art Unit 3729**

January 14, 2008

